

CLAIMS

1. A method for conveying signalling information from a transmitting device to a receiving device in a cellular radio network where user data transmission takes place on a traffic channel in discrete transmission bursts consisting of consecutive symbols, comprising the steps of:
- formatting a piece of signalling information into symbols,
 - transmitting the symbols carrying the signalling information as a block of consecutive symbols in a certain transmission burst of a traffic channel and
 - indicating within said certain transmission burst that it contains symbols carrying signalling information.
2. A method according to claim 1, wherein the step of transmitting the symbols carrying the signalling information comprises the substep of filling a complete transmission burst with the symbols carrying the signalling information.
3. A method according to claim 2, wherein the step of transmitting the symbols carrying the signalling information comprises the substep of filling a number of consecutive complete transmission bursts with the symbols carrying the signalling information.
4. A method according to claim 2, wherein the step of transmitting the symbols carrying the signalling information comprises the substep of filling a number of non-consecutive complete transmission bursts with the symbols carrying the signalling information.
5. A method according to claim 1, wherein additionally a transmission burst consists of a first half, a training sequence and a second half, and the step of transmitting the symbols carrying the signalling information comprises the substep of filling exactly one half of a transmission burst with the symbols carrying the signalling information.
6. A method according to claim 5, wherein the step of transmitting the symbols carrying the signalling information comprises the substep of filling exactly one half of each of a number of consecutive complete transmission bursts with the symbols carrying the signalling information.
7. A method according to claim 5, wherein the step of transmitting the symbols carrying the signalling information comprises the substep of filling exactly one half

of each of a number of non-consecutive complete transmission bursts with the symbols carrying the signalling information.

8. A method according to claim 1, wherein additionally a first phase modulation method of first modulation depth is used to generate the symbols carrying user data in a transmission burst, and the step of formatting a piece of signalling information into symbols comprises the substep of using a second phase modulation method of second modulation depth, lower than said first modulation depth, to generate the symbols carrying signalling information in a transmission burst.

9. A method according to claim 8, wherein said first modulation method is 8-PSK and the second modulation method is GMSK.

10. A method according to claim 8, wherein a first phase rotation scheme is used to generate the symbols with the first modulation method and a second phase rotation scheme is used to generate the symbols with the second modulation method, said second phase rotation scheme being essentially indistinguishable from the first phase rotation scheme.

11. A method according to claim 10, wherein to indicate within a certain transmission burst that it contains symbols carrying signalling information, the method comprises the step of placing a number of flag symbols having a certain indicator value within said transmission burst.

12. A method according to claim 11, wherein additionally a transmission burst consists of a first half, a training sequence and a second half, and only one half of a transmission burst is filled with the symbols carrying the signalling information, and the method comprises the step of placing two flag symbols within said transmission burst to indicate which half of the transmission burst contains symbols carrying signalling information.

13. A method according to claim 8, wherein a first phase rotation scheme is used to generate the symbols with the first modulation method and a second phase rotation scheme is used to generate the symbols with the second modulation method, said second phase rotation scheme being essentially distinguishable from the first phase rotation scheme; and the use of the second phase rotation scheme indicates within a certain transmission burst that it contains symbols carrying signalling information.

14. A transmitting device for transmitting signalling information to a receiving device in a cellular radio network over a traffic channel in discrete transmission bursts consisting of consecutive symbols, comprising:
- means for formatting a piece of signalling information into symbols,
 - means for transmitting the symbols carrying the signalling information as a block of consecutive symbols in a certain transmission burst of a traffic channel and
 - means for indicating within said certain transmission burst that it contains symbols carrying signalling information.
15. A transmitting device according to claim 14, comprising a dual-mode phase modulator for applying a first phase modulation method of first modulation depth to generate the symbols carrying user data in a transmission burst and a second phase modulation method of second modulation depth, lower than said first modulation depth, to generate the symbols carrying signalling information in a transmission burst.